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Armed Forces Vocational Interest Profile (ASVIP): Feasibility and Design Alternatives

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Interest measures are one of the most commonly used instruments by high school counselors. Currently, no measure of interest is offered by the military to high schools for use with Armed Services Vocational Aptitude Battery (ASVAB) results. This study involved a brief literature review of interest assessment and investigated the acceptance of a new interest measure by high school counselors and what design features counselors would like to have included.

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FOREWORD

The Navy is planning to develop an instrument to measure vocational interests that will be ultimately administered in conjunction with the Armed Services Vocational Aptitude Battery (ASVAB). This report reviews the literature concerning vocational interest assessment, and measures high school counselor preferences on the format and results reporting methods that the interest instrument should exhibit.

This research was funded through the Office of the Assistant Secretary of Defense (FM&P). The results of this report are expected to benefit Navy recruiting as well as the research community.

RICHARD C. SORENSON
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SUMMARY

Problem

In order to increase the number of qualified personnel entering the military, the Navy Personnel Research and Development Center is designing and developing a vocational interest assessment instrument, the Armed Services Vocational Interest Profile (ASVIP), that is compatible with the high school testing and counseling environment and could also be used in conjunction with the Armed Services Vocational Aptitude Battery (ASVAB) results.

Objectives

The objectives of this study were to: (1) assess counselor preferences on the format and results reporting methods the interest instrument should exhibit, and (2) assess the acceptance and use of a new interest assessment instrument by high school counselors.

Method

Subjects for the study were high school guidance counselors from a local school district. A total of 12 counselors participated; eight women and four men (with one black male and one black female). The counselors were divided into two discussion groups with six counselors in each group. A small group, structured interviewing approach (i.e., moderated discussion groups) was used as the means for data collection. During the discussion groups, other issues that were of importance to counselor acceptance of a new interest assessment instrument were also addressed.

Results and Conclusions

The design features this group of counselors would prefer in a new interest assessment instrument in rank order are:

1. Results linked with a measure of aptitude and sources of occupational information.
2. Inexpensive and effective.
3. Unbiased results.
4. Self scoring and interpretable.
5. Administration time should be about 30 minutes.
6. Results should be in terms of occupational themes vs. occupational scales.
7. Items should be in terms of activities associated with occupations vs. occupational titles.
8. All documentation, items, and results should be written at an appropriate reading level.
9. Results should be reported in terms of combined-sex scores.
10. Instrument should be attractively formatted and easy to read.

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INTRODUCTION

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In order to increase the number of qualified personnel entering the military, the Navy Personnel Research and Development Center is designing and developing a vocational interest assessment instrument, the Armed Services Vocational Interest Profile (ASVIP), that is compatible with the high school testing and counseling environment and could also be used in conjunction with the Armed Services Vocational Aptitude Battery (ASVAB) results.

Objectives

The objectives of this study were to: (1) assess counselor preferences on the format and results reporting methods the interest instrument should exhibit, and (2) assess the acceptance and use of a new interest assessment instrument by high school counselors.

In addition, a brief literature review is presented on the different methods of assessing vocational interests, use of interest assessment data, methods for scoring and reporting interest results, and validity of interest results in predicting job performance and job satisfaction.

Background

Various types of instruments are used for assessment purposes in career counseling and guidance programs. The purpose of these instruments is to help people understand themselves in terms of their talents, interests, values, and personality characteristics. Two of the most prevalent types of instruments used today are aptitude batteries and interest inventories.

The military has been administering the ASVAB to students for about 20 years. The primary purposes of the ASVAB is to provide the students with aptitude scores to assist them in career exploration and decision making. Today, ASVAB-14 is administered by Department of Defense (DoD) professionals, free of charge, to over 1 million students each year across the nation.

Review of the Vocational Interest Assessment Literature

The following is a brief literature review of interest assessment and is limited to the following topics: (1) types of interest assessment, (2) use of interest assessment results, (3) methods of scoring and reporting interest assessment results, and (4) the validity of interest assessment instruments in predicting job performance and job satisfaction.

The literature review consisted of a computerized search using the PsychLit data base, obtaining copies of commonly used interest inventories, and conversations with prominent psychologists in career guidance such as Dr. Edwin Herr, Dr. Stanley Cramer, Dr. Esther Diamond, and Dr. Peter Cairo on sources of information for the literature review.

Types of Interest Assessment

Super and Crites (1962) have observed that individual interests may be assessed in four ways: (1) manifest interests--what a person actually does as an indication of his or her interests, (2)

testing--assessing interests by using an instrument such as the Michigan Vocabulary Test on the grounds that if an individual is really interested in an occupation, he or she will know the vocabulary of that area, (3) expressed interests--areas in which an individual expresses interest, and (4) measured interests--determining the pattern of an individual's interests from his or her responses to lists of occupations or activities (e.g., interest inventories).

By far, the most common method in use today for assessing interests is interest inventories (Herr & Cramer, 1988). One ongoing controversy regarding interest assessment is the relative superiority of measured vs. expressed interests. To date, this controversy has not been resolved. Twenty years ago, review articles by Dolliver (1969), Holland and Lutz (1968), and Whitney (1969) reviewed research up to that time comparing the merits of expressed and inventoried interests. The authors concluded that expressed interests had predictive validity equal to or exceeding that of inventoried interests for selecting a college major or career (Slaney & Slaney, 1986). More recent reviews by Baker (1983), Borgen (1986), and Slaney and Slaney (1986) have found additional support for the predictive validity of expressed vocational choice (e.g., Apostal, 1985; Athanasou & Evans, 1983; Bartling & Hood, 1981; Borgen & Seling, 1978; Cairo, 1982; Holland & Gottfredson, 1975; Laing, Swaney, & Prediger, 1984; Slaney, 1978; and Slaney, 1984).

According to Borgen (1986), several of the above studies were inspired by the question of what to trust--person or test--when they disagree. Borgen states that thus far, research results show that when the two disagree, expressed choices often had superior predictive or concurrent validity to measured interests. When both agreed, predictive validity was even better. Laing et al. (1984) found that persistence in an expressed choice increases systematically as congruence between measured interests and that choice increases.

Although there has been a long history of research supporting the use of expressed interests in career guidance, career counselors have been extremely slow to increase the use of expressed interests in counseling (Borgen & Seling, 1978). According to Hansen (1984), counselors may be reluctant to use expressed interests as a primary means for interest assessment because they believe: (1) estimates of interest at a young age probably lack a sense of reality; (2) the large number of items in an interest inventory provide a more thorough sampling of interests; (3) expressed interests are less permanent than inventoried interests; and (4) expressed interests are unduly influenced by factors such as prestige, family pressure, and misconceptions of the world of work.

Hansen (1984) is also skeptical of the validity of expressed interests due to what she feels are inadequacies in the methodological designs in most of the studies investigating the predictive validity of expressed interests.

According to Hansen (1984), the preferred mode of vocational exploration now is the integration of expressed and inventoried interests. For students who have a definite occupational choice, interest inventory scores may serve as confirmation of choices already expressed during counseling. Conflicting results between expressed and inventoried interests can lead to useful discussions about the causes of the discrepancies and to a better understanding of an individual's motivation for selecting an occupation, which may be related to factors other than interests.

Use of Interest Assessment Results

In one of the few studies to survey the use of commercially published tests in high schools, Engen, Lamb, and Prediger (1982), found that about 80 percent of all high schools surveyed used interest inventories. The most frequently used interest inventories, according to their use at any grade level for at least one percent of the schools in the sample, are: (1) Kuder Occupational Interest Survey (Form DD), (2) Strong-Campbell Interest Inventory (SCII), (3) Kuder Vocational or General Interest Survey, (4) Ohio Vocational Interest Survey (OVIS), (5) Self-Directed Search (SDS), (6) California Occupational Preference Survey (COPS) (7) Judgment of Occupational Behavior-Orientation (JOB-O), and (8) Vocational Interest, Experience and Skills Assessment (VIESA).

Engen et al. (1982) reported that according to the survey results, the use of commercial tests still plays an integral role in high school counseling today. Although the overall frequency of test use has not changed greatly in the last 25 years, use of interest inventories has increased appreciably (Zytowski & Warman, 1982). Also, counselors have shifted from using measures of ability and achievement to using interest, value, and personality inventories (Hansen, 1984). Schools indicate they would do even more testing for career guidance purposes if the funds were available (Engen et al., 1982).

According to Hansen (1981a), interest inventories are used primarily by educational institutions, but the increased recognition of the importance of interests in career and life-style satisfaction has led to the use of interest measurement in government, business, and industry. Hansen reports that interest inventories are also being used occasionally in personnel areas such as selection and placement.

Hansen (1981a) goes on to explain that interest inventories are also useful in research projects designed to explore hypotheses generated from clinical experience. The hypotheses are tested against data and, if proven true, the results can be used to increase the counselor's knowledge of interests and vocational psychology in general.

Some descriptions of how Hansen believes that interest inventories can be used by counselors, clients, personnel specialists, and researchers are listed below.

Counselor Applications. This includes: (1) generating hypotheses and interviewing--one of the primary uses of interest inventory results for counselors should be to generate hypotheses about the client, which can be discussed, explored, and confirmed or discarded by the client; (2) selecting counseling techniques--while serving as an aid to interviewing, interest inventory scores can often give counselors clues for discovering the best counseling style to use with clients; and (3) counseling the handicapped--interest inventories can help the handicapped to identify interests as a starting point to promote emotional adjustment and educational and/or occupational satisfaction.

Client Applications. This includes: (1) beginning career exploration--scores on an interest inventory are measures of an individual's interest in various activity areas or occupations and suggest where an individual is most likely to persist and/or be happy; (2) making educational decisions--interest inventory results can be used not only to help an individual make a career choice but as guidance for selecting major courses and electives; (3) stimulating new interest--

occasionally, a client who appears to be seeking only vocational confirmation through test data will discover other potential choices that have not occurred to her or him; (4) considering alternative careers and life-styles--interpretation of the inventory is an opportunity for the counselor to discuss with the client his or her entire life-style rather than focus on vocational interests and occupational decisions; (5) planning midcareer changes--as a person's experiences broaden, earlier vocational decisions may no longer continue to provide satisfying outcomes and interest inventory results can help to structure the process of the individual's analysis of past and present interests and priorities; (6) reentering the job marked--interest inventories can be used to help individuals, especially women, to reenter the job market; (7) facilitating out-counseling--a person who has been released from his or her job can use this time to reevaluate occupational interests during the search for new employment; (8) preparing for retirement--examination of new occupational possibilities and avocational interest assessment via interest inventory results can be used to help people prepare for the change from full-time work to leisure; and (9) choosing leisure activities--Cairo (1979) indicates that homogeneous scales of interest (e.g., Holland's Self Directed Search) measure avocational interests as well as occupational interests and can be used as a starting point for evaluating leisure interests.

Personnel Specialist Applications. This includes: (1) selection--Reeves and Booth (1979) found in a study using the Navy Vocational Interest Inventory (NVII) that adding interest measures to an aptitude measure significantly increases the validity for predicting occupation effectiveness; and (2) placement--Flint (1979) described the use of the Strong-Campbell Interest Inventory (SCII) in placement and promotion of police officers and stressed that the SCII can complement other measures such as personality tests.

Research Applications. This includes: (1) personality research--many studies have been conducted to establish construct validity of vocational interest inventory scales by determining the relationship between personality and interests; and (2) identifying change and stability--interest results can be used to detect changes over time in interests at the societal level, and monitoring change or stability of interests within occupations and between the sexes.

Hansen (1981a) concludes that with increased recognition of career planning as a means to greater self-satisfaction in life, the process of career counseling has become more sophisticated and used to help a client integrate his or her past history with current and future goals.

Methods of Scoring and Reporting Interest Results

Two types of scales, heterogeneous and homogeneous, are used to measure interests (Hansen, 1984). Occupational scales developed using the empirical method of contrast groups are called heterogeneous because items selected for the scales have low correlations with one another (Berdie & Campbell, 1968). For example, the 207 Occupational Scales in the Strong-Campbell Interest Inventory are heterogeneous and compare the interests of an individual to the likes, dislikes, and indifferences of men and women already in each of the occupations.

In contrast to heterogeneous scales homogeneous scales contain items that have a high correlation with one another. Empirical methods of cluster analysis and factor analysis are used to identify and gather together related items for homogeneous scales; these scales are named on the

basis of the scale's item content (Hansen, 1984). An example of homogeneous scales would be the Basic Interest Scales developed by Campbell in the Strong-Campbell Interest Inventory.

A second type of homogeneous scale can be developed by the rational selection of items and was used to develop Holland's six General Occupational Themes, which appear in the Self Directed Search (Hansen, 1984). For rational scale construction, theory is used to determine which items in an item pool are appropriate for each scale while homogenous scale construction using cluster or factor analysis is a strictly statistical and atheoretical procedure (Hansen, 1984).

According to Hansen (1984), heterogeneous scales have the best predictive validity for determining occupational choice but homogeneous scales can be useful in exploring a client's interests as they relate to his or her entire life style. Together the heterogeneous and homogeneous scales provide a system of checks and balances that allows an individual to identify interests in a general way and then to more clearly define which of those interests are occupationally related using the heterogeneous scales (Campbell & Hansen, 1981).

Debate concerning the use of same-sex (i.e., male or female) norms, combined-sex (male and female) norms, and opposite-sex (i.e., gender opposite that of the test subjects) norms for reporting interest assessment results has historically been very controversial and complex. Until the 1970s, most interest inventories used same-sex norms to report scores (Seligman, 1980). However, increasing awareness of the potential for sex bias and stereotyping seems to have created a move away from the use of same-sex norms and toward the use of raw scores and combined-sex and opposite-sex norms (Seligman, 1980). Both Kuder (1977) and Campbell and Hansen (1981) concluded that failure to use same-sex norms for the two sexes would reduce the effectiveness of counseling. Hanson, Noeth, and Prediger (1977) concluded that scores based on same-sex norms had higher predictive validity than did raw scores or combined- or opposite-sex norms and suggested a less traditional range of occupational options than did other methods of reporting interest scores.

Others such as Tittle (1974) feel that reporting same- and opposite-sex norms, such as in the Strong-Campbell Interest Inventory, reflect cultural stereotypes and are another way of restricting choices for females. More in-depth reviews concerning the issues of sex bias and fairness in career interest measurement can be found in the *AMEG Commission on Sex Bias in Measurement* (1977), Diamond (1975), and Zytowski and Borgen (1983).

Some have argued that the sex differences in vocational interests that early researchers found may be diminishing in response to growing awareness that many aspects of traditional sex roles are arbitrary (Diamond, 1975). Hansen (1981b) has studied this possibility and concluded that societal effects do not seem to have had a dramatic effect on the interests of women from the 1920s through the 1980s and the need for same-sex norm groups still exists.

Studies examining client satisfaction with different kinds of interest inventories have similar results and report that clients have been equally satisfied with the SCII and Self Directed Search (O'Neil, Price, & Tracey, 1979) and the SCII and Vocational Card Sort (Slaney, 1978). Also, few differences were found in the effectiveness of different methodologies for presenting occupational information. Group approaches to interpretation have been found to be as effective as individual approaches by several researchers (e.g., Smith & Evan, 1973; Rubenstein, 1978). Comparisons of

various technological modes for presenting inventory results, such as slides, videotape, computer-assisted and written interpretive information, also suggest equivalent levels of client satisfaction (e.g., Miller & Cochran, 1979; Oliver, 1977).

According to Hansen (1984), group, video, computer, or individual presentations--rather than written interpretations--appear to provide the most information and lead the client to participate most fully in career exploration. But, Hansen states that clients do express more satisfaction with the interpretation process when they have individual interviews with a counselor.

Reliability of Selected Interest Measures

Below is an overview of the test-retest reliabilities for some of the more commonly used interest inventories:

1. Strong-Campbell Interest Inventory (Hansen, 1986):
   - General Occupational Themes .85
   - Basic Interest Scales .88
   - Occupational Scales .89
   - Academic Comfort Scale .86
   - Introversion-Extroversion Scale .90
2. Kuder Occupational Interest Survey (Zytowski & Kuder, 1986):
   - Vocational Interest Estimates .70-.83
3. Self Directed Search (Holland, 1985):

   (Note. The following are internal consistency, alpha, measures.)
   - Activity Scales .59-.86
   - Competency Scales .70-.83
   - Occupations Scales .74-.89
   - Holland Codes .84-.92
4. Ohio Vocational Interest Survey (Domino, 1985):
   - Occupational Scales .70s-.80s

As pointed out in Hansen (1984), interest measure reliability is often confused with interest stability. All of the above test-retest reliabilities were computed using a 4-week interval.

Prediction of Job Performance and Satisfaction

Hansen (1984) reports that most attempts to find a relationship between interests and occupational success have met with disappointment. According to Tyler (1965), one reason for these poor results is that most studies on the relationship between interests and success are limited by the use of only one indicator of job success. Another major problem in studying the relationship between interests and success is determining the criterion to represent success.

Other studies that have used more innovative designs, such as using ability as a moderator (e.g., Clark, 1961) found some interest scores more predictive of success at some ability levels than others. Reeves and Booth (1979) found that adding the Hospital Corpsman (HM) interest scores from the Navy Vocational Interest Inventory to verbal and arithmetic aptitude measures significantly increased the validity for predicting HM effectiveness from .36 to .41.

Hansen (1984) suggests that combining assessment of interests with assessment of abilities or aptitudes will improve prediction of achievement or success in academic or work settings. Hansen goes on to state that as a rule, persons with interest in, and the necessary ability for an occupation will do well in it; persons with the necessary ability but not the interest may or may not do well.

Just as the correlations between interest and job performance are not very high, correlations between interest results and ratings of job satisfaction are also low (Hansen, 1984; Gottfredson, 1986). According to Campbell (1971), the primary problem is the lack of variance in satisfaction among groups with homogeneous interests and that overall, most people indicate satisfaction with their work. A 6 year study of job satisfaction by Weaver (1980) reported that between 1972 and 1978, 88 percent of American workers said they were somewhat satisfied or very satisfied with their job.

In contrast, Gottfredson (1986) believes the problem with low interest-satisfaction correlations occurs because many studies combine data for persons working in diverse occupations in a single coefficient, and that between-occupation differences in satisfaction are great. For example, Kahn (1972) summarized data on the percentage of workers in different occupations who would choose similar work again. The percentages ranged from 93 percent for university professors to 31 percent for textile workers and 16 percent for unskilled workers.

Gottfredson cites research conducted on the Vocational Interest Career Examination (VOICE) by Alley, Wilbourn, and Berberich (1976), which not only showed that job satisfaction differed greatly among occupational groups but that the VOICE Basic Interest Scales showed incremental validity in forecasting job satisfaction within occupational groups. Gottfredson states that these results are consistent with other research in which Holland scales were found to have usefully high correlations with job satisfaction in homogeneous occupational groups (Wiggins, 1976). Gottfredson goes on to state that one useful application of forecasting job satisfaction within occupational groups may be in matching persons with occupations for which satisfaction is particularly important or in which attrition creates special difficulties or costs.

In conclusion, Seligman (1980) asserts that interest inventories, for the most part, assess intrinsic sources of satisfaction on the likelihood that an individual will enjoy a particular type of

work. However, Seligman states that factors regarding extrinsic satisfaction such as working conditions, salary, and life style inherent in a particular job or occupation are also important and manifest themselves in a person's expressed interests. Seligman recommends that counselors should be sure to discuss both intrinsic and extrinsic sources of satisfaction with their clients to determine clients' reactions to all aspects of an occupation.

METHOD

As stated in the overview, the primary purpose of this project was to examine the feasibility of developing an interest assessment instrument for use primarily in the vocational counseling of high school students by: (1) assessing counselor preferences on the format and results reporting methods the instrument should exhibit; and (2) assessing the acceptance and use of a new interest assessment instrument by high school counselors.

Subjects

Subjects for the study were high school guidance counselors from a local school district. After obtaining permission from the Supervisor of Guidance Services, a letter was sent to all high school counselors in the district (143) inviting them to participate in the study. A $25 stipend was offered to each counselor agreeing to participate and a guarantee that all individual responses would be confidential. A total of 12 counselors responded to the invitation; eight women and four men with one black male and one black female. The counselors were divided into two discussion groups with six counselors in each group.

Although counselors participating in this study may not be representative of counselors-in-general, one inference that can probably be made is that they are most likely much more sophisticated than counselors-in-general. First, the school district for which these counselors work is one of the most affluent in the United States. Many of the students from these high schools go on to colleges that are quite competitive. Second, only a small, self-selected group of counselors agreed to participate out of the total number that were invited. This leads one to infer that the counselors agreeing to participate are probably even more sophisticated and current in the issues regarding the counseling of high school students than most counselors in their district and much more than counselors in general.

Procedure

All counselors agreeing to participate were sent a follow-up letter consisting of information on how to get to the meeting site, and a discussion agenda. The follow-up letter also asked the counselors to imagine that if they could develop a new interest assessment instrument for high school students, what design features would they want to have included. Counselors were asked to write down their top five preferences in rank order and bring them to the meeting where they would be collected by the moderator prior to starting the discussion group. The reasons for asking counselors to think about and write down their preferences before coming to the discussion groups were to: (1) stimulate counselor thinking regarding issues surrounding the measurement of interests and about their preferences for a new interest assessment instrument prior to convening the discussion group; and (2) allow counselors time to think about their preferences without being influenced by the opinions of their peers.

This brief survey also gave the moderator a quick preview of counselor preferences that should be addressed first by the group and which may not otherwise have been considered by the moderator.

A small group, structured interviewing approach (i.e., moderated discussion groups) was used as the means for data collection. During the discussion groups, other issues that were of importance to counselor acceptance of a new interest assessment instrument were also addressed.

All discussion groups were moderated by a professional thoroughly familiar with issues regarding the use of interest assessment instruments in high schools. The length of each discussion group was about 1.5 hours. Discussions were tape recorded with the prior consent of all participants. Most of the counselors were familiar with one another, generally very personable, and quite eager to talk about interest assessment in high schools. The moderator's role was primarily to provide structure to the discussions by: (1) ensuring that all participants had a chance to voice their opinions and that no one participant dominated the discussions; (2) encouraging participants who were not speaking much to participate by directly soliciting their opinions on different topics; (3) ensuring that the group did not dwell too long on any one topic; and (4) ensuring that all topics were addressed from the topic guide and the survey of counselor preferences.

The moderator also had to be aware of new issues of importance that arose during the discussions and which therefore needed to be addressed by the group.

Before conducting the discussion groups, the moderator prepared a topic guide. Below is a list of the points that were included in the topic guide:

1. Should the instrument items be occupational titles, activities associated with occupations, or a combination of both?

2. Should the new instrument measure expressed interests, inventoried interests, or both?

3. In what way should the instrument report results (e.g., occupational scales, occupational themes, etc.)?

4. Should the instrument results be reported in terms of same-sex, opposite-sex, or combined-sex scores?

5. How would you prefer the instruments be scored (i.e., self- or computer-scored)?

6. By whom should the results of the instrument be interpreted (i.e., self, counselor, group)?

7. What is the maximum length of time it should take to complete the interest assessment instrument?

8. How much should the instrument cost to administer?

9. How important is the scientific soundness of the instrument?

10. How should the new instrument be formatted?

Other topics of importance to the counselors were also raised and addressed during the discussions.

RESULTS

Below are the discussion group results organized according to the talking points in the above topic guide. Also included are the results from an interview with the Superintendent of Guidance (SOG) of the school district. Additional topics of importance to the counselors and SOG but not included in the topic guide are also described.

Item Type

Counselors were asked if they preferred the new instrument to contain items that had the student respond to occupational titles, activities associated with occupations, or a combination of both. The counselors were almost unanimous in their preference for the instrument items to be only activities associated with occupations. They did not like the idea of using occupational titles because of their susceptibility to stereotypes, etc. The counselors were particularly concerned that the salaries associated with certain occupations would have a very strong influence on how students responded to occupational titles. The counselors have reason for concern since occupational titles have some established stereotypical reliability (Baker, 1983).

Expressed vs. Inventoried Interests

Overwhelmingly, counselors did not like the idea of the new instrument assessing expressed interests only. They felt expressed interests were too susceptible to factors such as occupational misconceptions and associated salaries and preferred an instrument with items describing activities. When the moderator probed further and asked how they would respond to an instrument that included both expressed and inventoried interests so that inventoried and expressed results could be compared, the counselors were much more responsive. They felt this would be a good idea because the expressed interests include aspects of desired life-style, which are not included in the inventoried results.

Seligman (1980) would agree with this reasoning and states that most interest inventories measure primarily intrinsic sources of satisfaction without considering outside or extrinsic sources of satisfaction such as working conditions, salary, and life-style. Hansen (1984) also states that the preferred mode of career counseling today is to consider both expressed and inventoried interests. In contrast, both Baker (1983) and Slaney and Slaney (1986) cite recent and considerable evidence supporting the predictive validity of expressed interest measures.

Results Reporting Format

In general, counselors favored the use of basic interest scales or occupational themes (i.e., homogeneous scales) over the use of occupational scales (i.e., heterogeneous scales). Counselors were almost unanimous in their belief that students in high school needed to explore their interests in terms of how they relate to their entire life style rather than just how their interest results compare with those of people in many different occupations. As discussed in Hansen (1984), this is the greatest benefit of homogeneous scales over heterogeneous scales. The primary criticism counselors had against occupational scales was that they tended to overload the student with information and that for this time in a student's life, exploration of interests was more important than occupational prediction.

Also, counselors felt some method for linking interest results to areas of study in college would be very beneficial. They explained that many of their students went on to college and that they were much more concerned about selecting a college major than a specific occupation. They asserted that such a linkage would enable the interest measure results to be used for counseling both college-bound and non college-bound students.

Sex Bias

When asked if the new instrument results should be reported in terms of same-sex, opposite-sex, or combined-sex scales, the counselor responses were very mixed. First, most of the counselors were not familiar with the pros and cons regarding the use of such scales and did not consider scale type a major factor in their decision to use a new instrument. This is not surprising given the complexity and controversial nature of this topic among researchers. Many of the counselors felt that same sex scales were sexist because they attempted to measure the interest of men and women differently. Some counselors felt there was no need for same sex scales because women today believe they can do anything (although the research of Hansen (1984) reached a different conclusion). In general, counselors felt only one combined-sex scale was needed.

If one assumes that these counselors are probably much more sophisticated than counselors-in-general, then most counselors in the U.S. probably do not understand the issues regarding sex bias in reporting interest assessment results. One conclusion that can be made is that no matter what scale might be used for the new interest measure, a clear and thorough explanation in the instrument manual will be needed to explain how the scales should be interpreted by the counselor.

Reviewing the course of both discussion groups, it was noted that the use of same-sex scales certainly did not seem to decrease counselor enthusiasm for certain instruments and that possibly this is really not that important of an issue for counselors. For example, during both discussion groups counselors expressed praise for the ASVAB and Strong-Campbell Interest Inventory, both of which use separate-sex scales to report aptitude and interest.

Scoring

All of the counselors preferred that the instrument be scored by the student and not have to be sent out for computer scoring. They preferred two results sheets be included, one for both the student and counselor. Many of the counselors stressed the value of immediate feedback, which

could be obtained through self-scoring. In theory all of the counselors felt that in the future, a computer administered and scored instrument would be desirable but that currently there were not enough computer terminals available to them to make this feasible.

Interpretation of Results

Along with being self-scoring, counselors stated the new instrument should also be self-interpretable. The counselors felt the results sheet should have very clear documentation accompanying it to help the students and their parents interpret the results. Also, the documentation should encourage students to discuss their results with a school guidance counselor.

Time

The majority of counselors felt that the instrument should be such that even the slowest student would be able to complete it in about 30 minutes. Counselors explained that the 30 minute completion time was necessary because often they had to give the instrument within a 45 minute class period. Although there was some discussion that the instrument could be completed at home and did not need to be restricted to 30 minutes, many of the counselors still preferred that the instrument be no longer than 30 minutes. Time was also a factor considered by the SOG when reviewing any instrument because testing time usually cuts into class time.

Cost

A very big factor for both the counselors and the SOG was that cost alone would not determine their decision to use a new interest measure and that both cost and value would have to be considered. Several counselors expressed their dislike for instruments where they had to pay for both the instrument and for having it scored. In order to reduce the cost of a new interest measure, many of the counselors recommended having reusable test booklets with separate answer sheets that could be kept by the students. Counselors also noted that the less expensive a test's administration costs, the more students that could be tested.

The level of importance that the counselors and SOG gave to cost is notable considering that they work in one of the more affluent school districts in the U.S. One can probably infer that if cost is of concern to this group of counselors, then it would be of concern to almost all personnel in the U.S. who are in charge of selecting assessment instruments for school use. The counselor and SOG's concern with instrument cost is also in agreement with the results a survey of schools conducted by Engen, Lamb, and Prediger (1982), which found that 72 percent of the schools surveyed would administer more tests if they had more time and money.

Scientific Soundness

Although the scientific soundness of a new interest instrument was not of great importance to the counselors, it was very important to the SOG. The SOG stated that all instruments that are used in the district must be first approved by a review committee. Some of the criteria the committee considers when reviewing different instruments are factors such as the instrument's validity, reliability, norm group used, etc. The counselors did state they would not want to use an instrument that reported biased results.

Instrument Format

Neither the counselors nor the SOG had any strong preference as to how the instrument should be formatted. In general, they thought the instrument should be organized to be very readable and that the type should not be too small (a problem several of the counselors noted in some of the currently available instruments). The counselors also felt that the layout should be attractive to students but not include so many "bells and whistles" that it would significantly increase the instrument's price. They also felt the instrument should be designed so it does not appear that completing it will be an overwhelming task for the student.

Integration of Interest Results With Aptitude and Occupational Information

Although this issue was not on the moderator's topic guide, it was an extremely important topic for the counselors. In both the counselors' survey results and during discussion groups, all of the counselors said there were very few interest instruments available today that linked interests to either aptitude or occupational information and that having this feature in a new interest instrument would be a major selling point. They felt current instruments that attempt to make these links either do not do a very good job or are extremely difficult and complex to use.

Counselors explained that the link with aptitudes was important because a student's interest results may highlight occupations for which the counselor knows the student does not have the required level of aptitude. Having a link with aptitude would direct students to occupations they are not only interested in but also have the required level of aptitude. In both discussion groups, counselors felt the ASVAB was one of the better tests of aptitude being used in schools today and found its results reporting format to be very clear and understandable. When asked about their acceptance of an interest measure linked with ASVAB results, all of the counselors stated this would be a great idea. (Note. Counselors were not told the name of the client until the end of each discussion group and any remarks by counselors regarding the DoD Student Testing Program and ASVAB were spontaneous.)

Counselors believed a link with occupational resources was important because more is needed than just highlighting for a student a group of occupations he or she might be interested in. Counselors felt the documentation for helping students to interpret their interest results should also encourage students to learn more about the occupations they are interested in by directing them to occupational resources such as the Occupational Outlook Handbook (OOH). Counselors also felt the occupational titles used in the interest results should be compatible with those used in sources of occupational information such as the OOH.

Reading Level

Reading level also was not on the moderator's topic guide but was of some importance to counselors and the SOG. They explained that all directions, documentation, and items should be very readable and use a simple vocabulary. Counselors felt the instrument's reading level should be documented in the counselor's manual.

CONCLUSIONS

The design features this group of counselors would prefer in a new interest assessment instrument are in rank order:

1. Results linked with a measure of aptitude and with sources of occupational information.

2. Inexpensive and effective.

3. Unbiased results for women and minority groups.

4. Self scoring and interpretable by student, with materials provided to counselors for more extensive interpretation.

5. Administration time should be about 30 minutes.

6. Results should be in terms of occupational themes such as Basic Interest Scales and/or Holland codes.

7. Items should be in terms of activities associated with occupations vs. occupational titles; combined assessment of expressed and inventoried interests was also thought to be very useful.

8. All documentation, items and results should be written at an appropriate reading level.

9. Results should be reported in terms of combined-sex scores.

10. Instrument should be attractively formatted and easy to read.

The above ranking of counselor preferences was done subjectively by the moderator and does not constitute an empirical ranking.

Computerization was often discussed by the counselors. They stated that computers could help them greatly to integrate and improve the delivery of career guidance services to students although they currently did not have enough hardware available to take advantage of existing career guidance software. Counselors felt this situation will be resolved as hardware becomes cheaper and more available. Several of the counselors had seen demonstrations of videodisk career guidance software and were very impressed. Borgen (1986) and Cairo (1983) also believed that computers and videodisk technology will be the wave of the future for career counseling. Hence, the new interest assessment instrument should be designed so that it can be easily administered via paper-and-pencil and/or computer.

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